ALESIS
MICRON (Q02)
Service Manual

P/N: 8-31-0147-A

Preface

This document is intended to assist the service technician in the operation, maintenance and repair of the Alesis device. Together with the User Reference Manual, this document provides a complete description of the functionality and serviceability of the Device. Any comments or suggestions you may have pertaining to the document are welcome and encouraged.

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Warnings

TO REDUCE THE RISK OF ELECTRIC SHOCK OR FIRE, DO NOT EXPOSE THIS PRODUCT TO WATER OR MOISTURE.

The arrowhead symbol on a lightning flash inside a triangle is intended to alert the user to the presence of un-insulated "dangerous voltage" within the enclosed product which may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point inside a triangle is intended to alert the user to the presence of important operating, maintenance and servicing instructions in the literature which accompanies the product.

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Regarding the Power Supply Fuse

CAUTION: The product under service may employ the use of a replaceable fuse. Danger of fire or electrocution if fuse is incorrectly replaced. Replace with only the same type or equivalent type recommended by the equipment manufacturer.

Regarding the Internal Battery

CAUTION: The product under service may employ the use of a internal battery. Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instruction.

Safety Instructions

Carefully read the applicable items of the operating instructions and these safety suggestions before using this product. Use extra care to follow the warnings written on the product itself and in the operating instructions. Keep the operating instructions and safety suggestions for reference in the future.

1. Power Source. The product should only be connected to a power supply which is described either in the operating instructions or in markings on the product.

2. Power Cord Protection. AC power supply cords should be placed such that no one is likely to step on the cords and such that nothing will be placed on or against them.

3. Periods of Non-use. If the product is not used for any significant period of time, the product's AC power supply cord should be unplugged from the AC outlet.

4. Foreign Objects and Liquids. Take care not to allow liquids to spill or objects to fall into any openings of the product.

5. Water or Moisture. The product should not be used near any water or in moisture.

6. Heat. Do not place the product near heat sources such as stoves, heat registers, radiators or other heat producing equipment.

7. Ventilation. When installing the product, make sure that the product has adequate ventilation. Improperly ventilating the product may cause overheating, which may damage the product.

8. Mounting. The product should only be used with a rack which the manufacturer recommends. The combination of the product and rack should be moved carefully. Quick movements, excessive force or uneven surfaces may overturn the combination which may damage the product and rack combination.

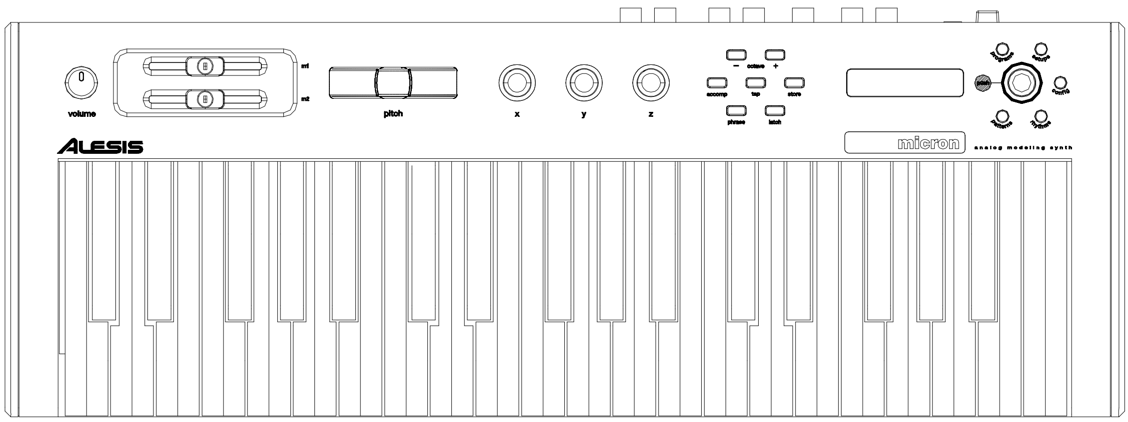
9. Cleaning. The product should only be cleaned as the manufacturer recommends.

10. Service. The user should only attempt the limited service or upkeep specifically described in the operating instructions for the user. For any other service required, the product should be taken to an authorized service center as described in the operating instructions.

11. Damage to the Product. Qualified service personnel should service the unit in certain situations including without limitation when:
    a. Liquid has spilled or objects have fallen into the product,
    b. The product is exposed to water or excessive moisture,
    c. The AC power supply plug or cord is damaged,
    d. The product shows an inappropriate change in performance or does not operate normally, or
    e. The enclosure of the product has been damaged.

SERVICE MANUAL

MODEL:Q02



Specifications

Sound Engine
Sound Generation:
Alesis proprietary DSP Analog Modeling
Polyphonic Voices:
8, each with 3 oscillators, 2 multi-mode filters, 3 envelope generators, 2 LFOs, programmable effects send and modulation matrix.

Program Memory:
512 Preset Programs, 32 Multi-timbral Setups, all user-rewritable

Effects:
4 Drive Effects (1 each per Part) plus Master Effects (Shared)

Audio Input
Input Connectors: 2 Balanced 1/4" TRS jacks
Maximum Input Level: +5.2dBu (1.41VRMS) = -0dBFS
Input Impedance: 10kΩ

Audio Output
Output Connectors: 4 Impedance-Balanced 1/4" TRS jacks, ¼" TRS Headphone Jack
Maximum Output Level: +18dBu (6.17 VRMS) = -0dBFS
Output Impedance: 1kΩ

Audio Performance
Signal To Noise Ratio: >95 dB A-weighted, Ext In to Main or Aux Out
THD+N: < 0.005%, External In to Main or Aux Out
Frequency Response: 20-20kHz±0.20dB, External In to Main or Aux Out
Power Consumption: 12 Watts max (100-240VAC/50-60Hz)

Physical
Keyboard: 37 keys (velocity, release velocity sensitive)
Real-Time Controllers: 3 360-degree Parameter Knobs, 2 Assignable Modulation Sliders, Assignable Pitch Wheel,
Pedal Jacks: Assignable Exp pedal jack, Sustain pedal jack
MIDI Connections: MIDI In, MIDI Out, MIDI Thru
Audio Outputs: Main L/R , Aux L/R, Headphone (1/4" TRS)
Dimensions (WxHxD): 22.75" x 2.75" x 7.75" / 577.85 x 69.85 x 196.85 mm
Weight: 8.25 lbs / 3.5 kg

Volume
The (volume) knob on the far left-hand side of the Micron raises and lowers
the volume. If you don't hear anything as you play the Micron,
suspect the (volume) knob's setting.

Real-time controllers
The (m1) and (m2) sliders, (pitch) wheel, and (x/y/z knobs), located on the left half of the Micron, provide real-time control of
the Micron's sounds.

Performance buttons
The buttons in this cluster switch octaves, set the tempo, and perform other performance-related functions.

ALESIS
MICRON (Q02)
COMPONENTS

Display
Information relevant to the current operation is shown here.

Control knob circle
These are the Micron's most important controls – the control knob and the buttons that surround it. Pressing one of these buttons – [programs], [setups], [config], [patterns], or [rhythms] – puts you into one of the Micron's primary modes of operation. Turning the control knob then cycles through options. Pressing the control knob allows for editing.

Key concepts
Here are the Micron's most important concepts:

Programs
Programs are the Micron's sounds, built from its oscillators, envelopes, filters, modulation matrix, and other analog-style components.
.

Rhythms
Rhythms are combinations of drum programs with patterns. Think of a drum machine with its interchangeable sounds and patterns. That's pretty close to what rhythms are.

Patterns
Patterns are repeating melodic and/or rhythmic motifs. Arpeggiosand step sequences are examples of patterns.

Setups
Setups combine multiple programs, rhythms, patterns, and more. They are the Micron's most powerful and most sonically sophisticated element.

Navigating with the transparent control knob and its buttons
Use the transparent control knob to the right of the display and its surrounding circle of buttons to navigate through the Micron's options. Most Micron functions involve pressing the buttons and then turning or pushing this knob.

Green Light/Red Light
The buttons circling the control knob glow green when selected and glow red when the control knob has been pushed (enteringedit mode).

The exception is the [config] button. [config] only glows red, since it only performs editing functions.

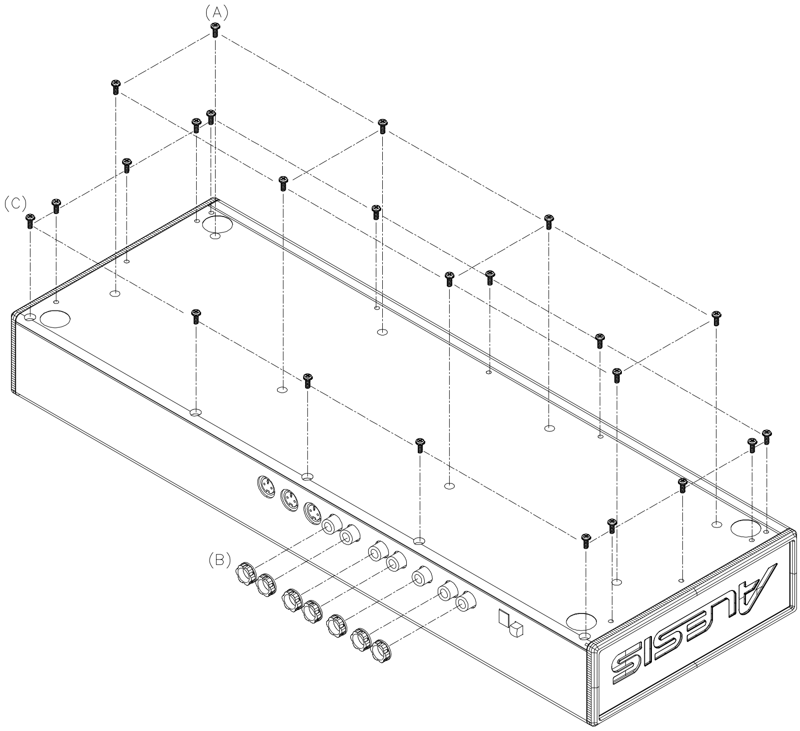
At any one time, only one of the buttons will glow, indicating that the Micron is operating within that mode.

Turn
Turn the control knob to cycle through various options.

Push
Push the control knob to edit the option displayed. Push again to stop editing.

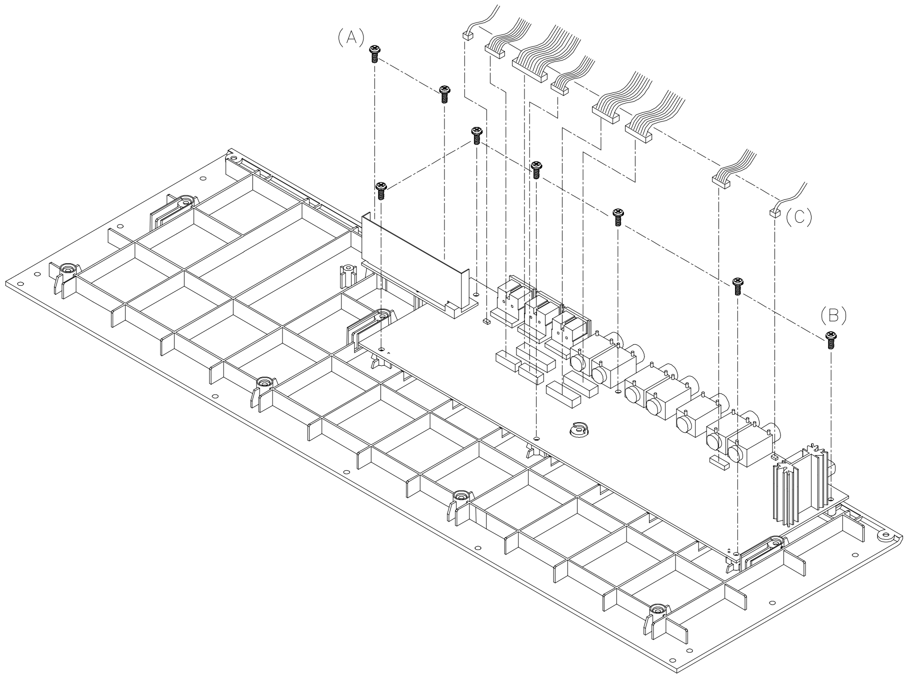
DISASSEMBLY PROCEDURES

1. REMOVAL OF TOP AND BOTTOM PANEL (Fig.1)
   (A) TAKE OUT THE 8 PCS SCREW FIXING THE KEYBED FROM WHICH THE BOTTOM CHASSIS
   (B) TAKE OUT THE 7 PCS NUT OF 1/4" CONNECTORS FROM TOP PANEL
   (C) TAKE OUT THE 16 PCS SCREW FROM WHICH THE BOTTOM PANEL



(Fig.1)

2. REMOVAL OF MAIN PCB AND LED PCB (Fig.2)
   (A) REMOVAL THE 2 PCS SCREW FROM WHICH LED PCB
   (B) REMOVAL THE 6 PCS SCREW FROM WHICH MAIN PCB
   (C) REMOVAL THE 8 PCS OF CABLE CONNECTORS FROM MAIN PCB



(Fig.2)

3. REMOVAL OF ASSY PCB (Fig.3)

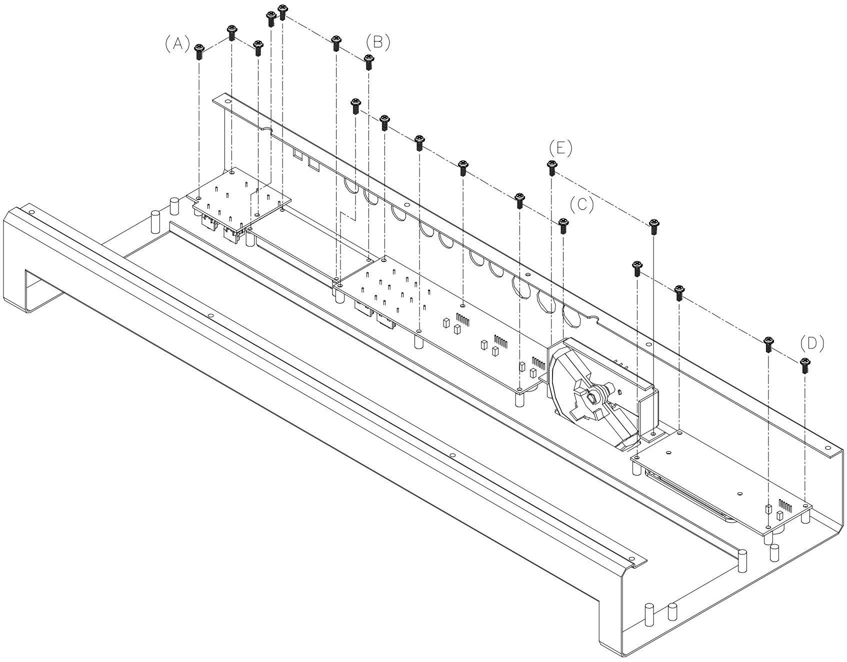
(A) REMOVAL THE 3 PCS SCREW FROM THE TOP PANEL RIGHT PCB

(B) REMOVAL THE 4 PCS SCREW FROM THE LCD PCB

(C) REMOVAL THE 6 PCS SCREW FROM THE TOP PANEL CENTER PCB

(D) REMOVAL THE 4 PCS SCREW FROM THE TOP PANEL LEFT PCB

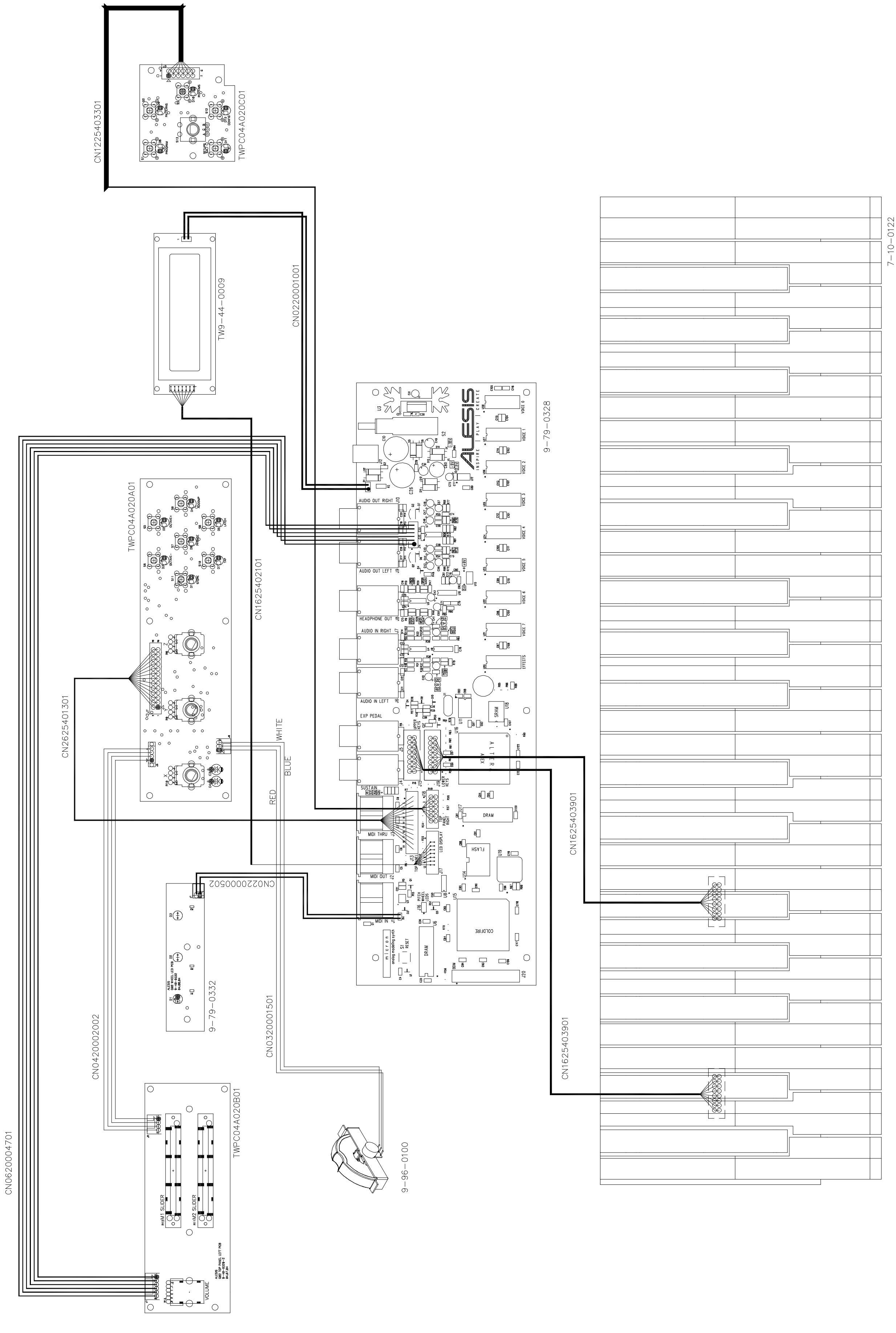
(E) REMOVAL THE 2 PCS SCREW FROM THE ASSY PITCH WHEEL



(Fig.3)

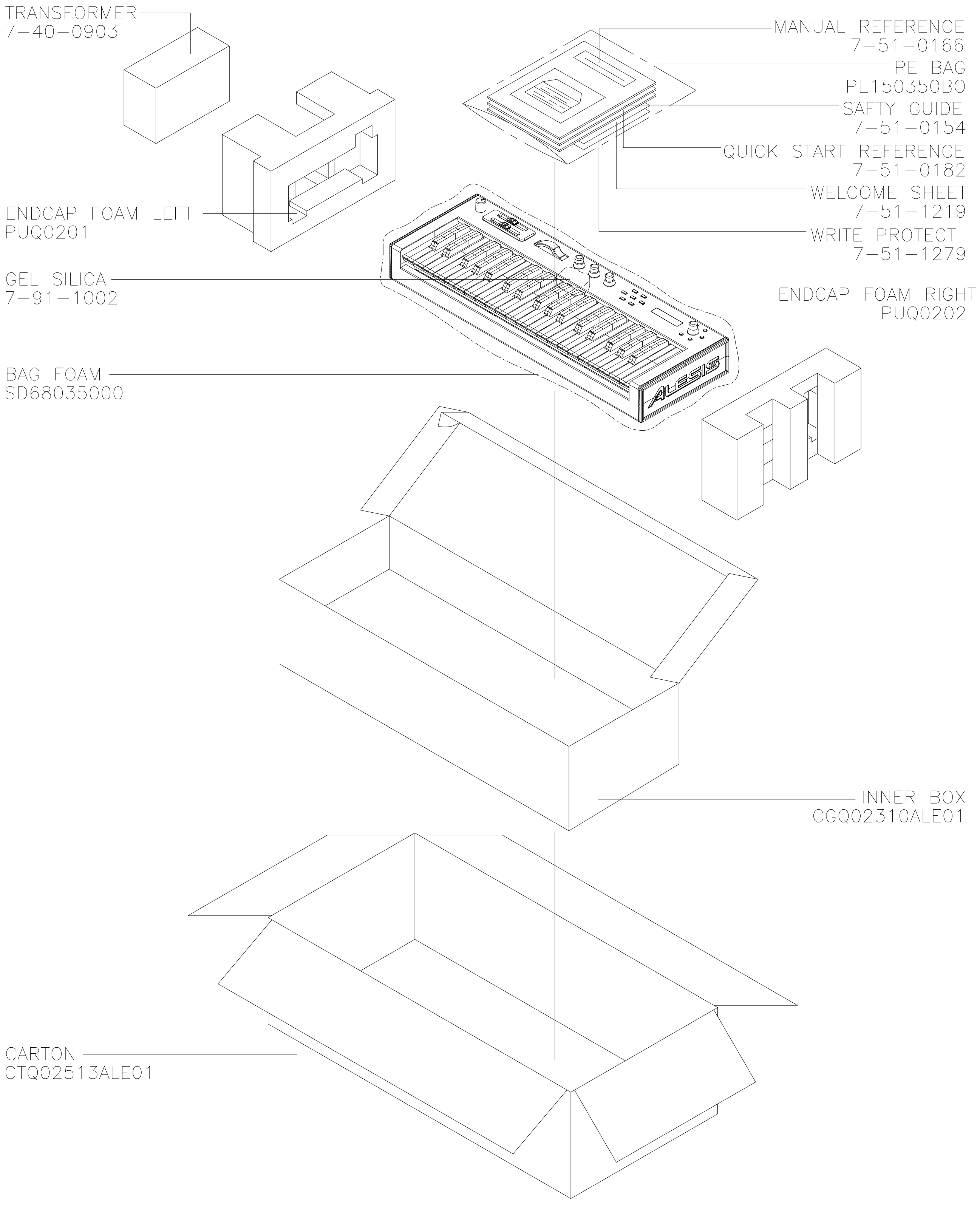
WIRING DIAGRAM

(US/EU/UK/AUS NZ)



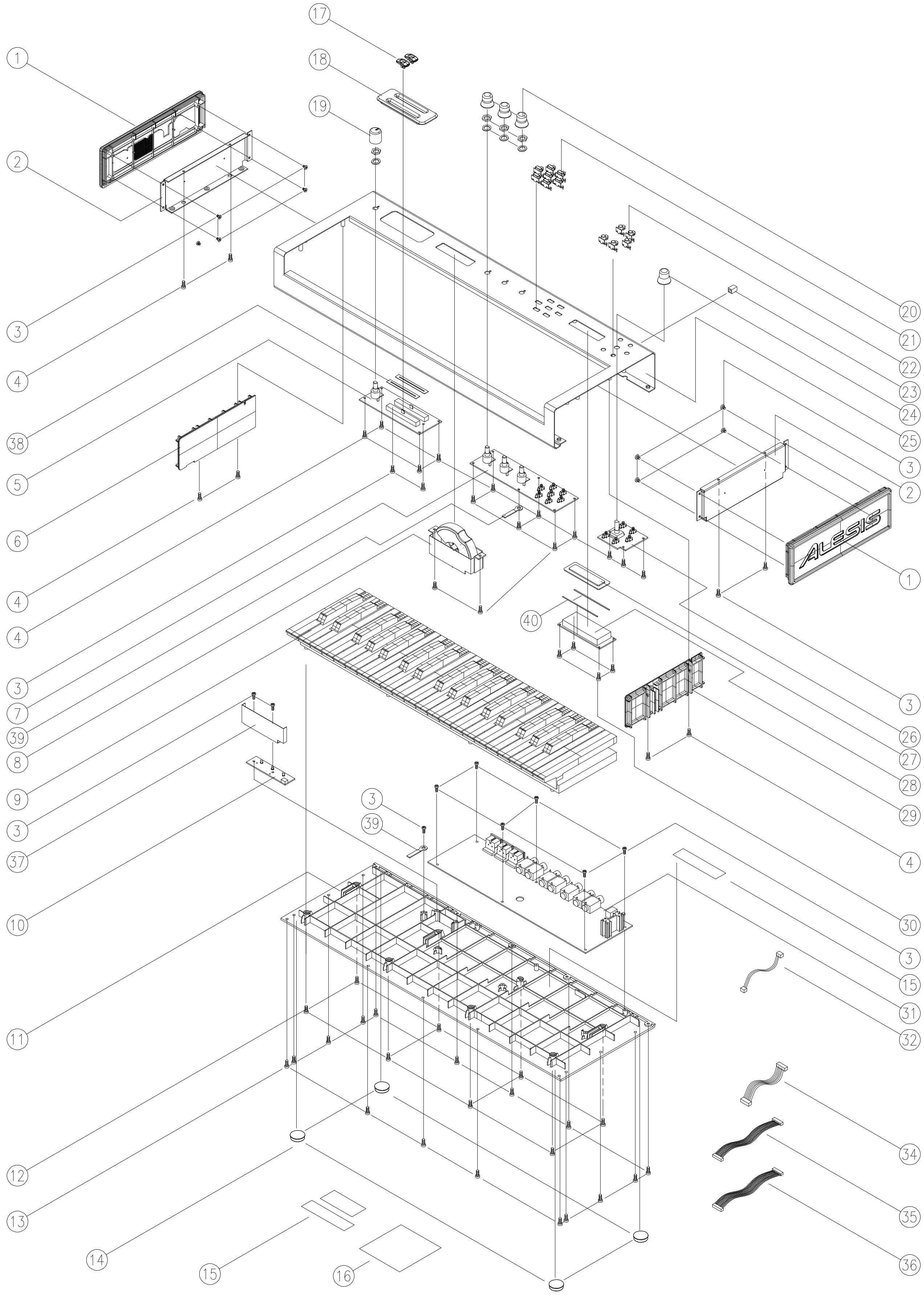
PACKING DIAGRAM

(US/EU/UK/AUS NZ)



EXPLODE DIAGRAM

(US/EU/UK/AUS NZ)



SEQUENCIAL NO OF EXPLODE DIAGRAM WILL BE MARKED ON REF. COLUMM OF BOM LIST

ALESIS
MICRON (Q02)

BOM

Q02 BOM

LEVEL	P/N	DESCRIPTION	QTY	REF
1	PT130442401	FIXED HOLDER	2	1
1	MT1304449	FIXED METAL	2	2
1	SC0308RBZI	SCREW	19	3
1	SC0306RICI	SCREW	23	4
1	9-15-0307	END CAP LEFT	1	6
1	7-10-0122	KEYBED 37 KEYS	1	9
1	PT133030401	BOTTOM CHASSIS	1	11
1	SC0310RBZI	SCREW	8	12
1	SC3506AICI	SCREW	16	13
1	BAAR-034	PU STAND	4	14
1	LAC22ALE27	STICKER BARCODE S/N	1	15
1	PT131067101	CAP FADER	2	17
1	PT130442301	FIXED HOLDER	1	18
1	9-15-0304	KNOB VOLUME	1	19
1	9-15-0303	KNOB	3	20
1	PT131064501	BUTTIN	7	21
1	PT131063601	BUTTIN	5	22
1	BAPS-W010	SWITCH CAP	1	23
1	PT1310675	KNOB	1	24
1	9-01-0082	FRONT PANEL	1	25
1	9-10-0065	LENS LCD	1	27
1	9-15-0308	END CAP RIGHT	1	29
1	SC2606RINI	SCREW	4	30
1	CN0220000502	CONNECTOR	1	32
1	CN0620004701	CONNECTOR	1	34
1	CN1625402101	CONNECTOR	1	35
1	CN1625403901	CONNECTOR	2	36
1	PT1304711	INSULATOR SHEET	1	37
1	NM1106112	VELVET CARPET	2	38
1	BAGL-70L	CLIP	1	39
1	EVA1304408	EVA	2	40
1	TF57023201UL	TRANSFORMER	1	
1	PQ02ALE01	PACK	1	
2	LAC52ALE01	LABEL	1	16
2	7-51-1219	SHEET	1	
2	CTQ02513ALE01	CARTON	1	
2	CGQ02310ALE01	INNER CARTON	1	
2	PUQ0201	FOAM	1	
2	PUQ0202	FOAM	1	
2	7-91-1002	GEL SILICA	1	
2	PE150350BO	POLYBAG	0.01	
2	SD68035000	SOFT SHEET	1	
2	7-51-0166	INSTRUCTION BOOK	1	
2	7-51-0182	QUICK START MANUAL	1	
2	7-51-0154	OPERATION MANUAL	1	
2	7-51-1279	MANUAL REFERENCE PV	1	
1	LAP67YAH255	LABEL	4	
1	**TW9-44-0009**	LCM組品	**1**	28
2	CN0220001001	單頭聯結器(2P 100MM)	1	
2	4-14-0016	雙排排針16P 254 180	1	
2	9-44-0009	LCM	1	
1	**9-96-0100**	PITCH WHEEL組品	**1**	8
2	CN0320001501	連結器(3P 150MM)	1	
2	MT1304412	轉輪固定鐵片	1	
2	WS1306505	華司	1	
2	0-09-0037	可變電阻5KB	1	
2	7-13-0080	熱縮套管1/16"X5/8"	2	
2	9-06-0030	彈簧	1	

Q02 BOM

LEVEL	P/N	DESCRIPTION	QTY	REF
2	9-15-0301	PITCH MOD轉輪	1	
1	**TWPC04A02001**	**FRONT PANEL PCB ASS'Y**	**1**	
2	**PC04A020**	**FRONT PANEL PCB**	**1**	
2	**TWPC04A020A01**	**FRONT PANEL PCB ASS'Y**	**1**	**7**
3	CN0420002002	4P CONNECTOR (200mm)	1	J5
3	CN2625401301	26P CONNECTOR (130mm)	1	J7
3	PC04A020A	FRONT PANEL PCB	1	
3	TE622000302	3P CONNECTOR	1	(J6)
3	TE812000411	4P CONNECTOR	1	(J5)
3	0-09-0044	VR 2.5KB	3	R8~10
3	0-16-2002	RESISTOR 20K (SMD)1%	1	R5
3	0-17-0103	RESISTOR 4×10K 1/16W	3	R3,4,6
3	0-17-0331	RESISTOR 4×330O 1/16W	2	R1,2
3	1-08-0222	ELECT 22UF/16V	2	C3,4
3	1-08-0223	ELECT 220UF/16V	1	C13
3	1-56-0102	CERAMIC 1000P (SMD)	1	C6
3	1-56-0104	CERAMIC 0.1UF (SMD)	14	C1,2,5,7~12,14~18
3	2-51-4401	TRANSISTOR 2N4401	5	Q1~4,28
3	2-51-4403	TRANSISTOR 2N4403	2	Q10,16
3	2-62-0595	IC 74HC595	1	U1
3	2-72-0339	IC LM339	1	U4
3	2-72-4051	IC CD4051	1	U3
3	3-02-0049	RED LED	7	D1~7
3	6-02-0050	SWITCH	7	S5~11
2	**TWPC04A020B01**	**LEFT PANEL PCB ASS'Y**	**1**	**5**
3	PC04A020B	LEFT PANEL PCB	1	
3	RS15218J05	RESISTOR 1K5 (SMD)	2	R160,170
3	TE10200602	6P HEADER	1	J1
3	TE622000401	4P HEADER	1	J3
3	0-09-0046	VR 10KA	1	R13
3	0-09-1038	VR 10KB	2	R11,12
3	1-56-0104	CERAMIC 0.1UF (SMD)	4	C11,12,19,20
2	**TWPC04A020C01**	**RIGHT PANEL PCB ASS'Y**	**1**	**26**
3	CN1225403301	12P CONNECTOR (330mm)	1	J2
3	PC04A020C	RIGHT PANEL PCB	1	
3	RS75018J05	RESISTOR 75O (SMD)	1	R14
3	1-56-0104	CERAMIC 0.1UF (SMD)	1	C2
3	2-62-0595	IC 74HC595	1	U2
3	3-03-0001	LED (TR1-STATE)	5	D8~12
3	6-00-0008	ENCODER	1	S13
3	6-02-0050	SWITCH	5	S1~4,12
1	**9-79-0328**	**MAIN PCB ASS'Y**	**1**	**31**
2	DIN4002	DIODE	8	D1,2,5,8,11~14
2	JKDJ-0702B-025	JACK	1	J12
2	MT1303215	HEATSINK	1	(U3)
2	NUT0103IZI	NUT	1	(U3)
2	RS10118J05	RESISTOR 100O (SMD)	4	R83,87,88,89
2	RS10218J05	RESISTOR 1K (SMD)	17	R3,11~14,23~27,35,41~44,51,78
2	RS10318J05	RESISTOR 10K (SMD)	8	R1,5,37~39,45,48,84
2	RS10418J05	RESISTOR 100K (SMD)	13	R17~22,28~32,81,82
2	RS18218J05	RESISTOR 1K8 (SMD)	4	R36,40,52,53
2	RS20318J05	RESISTOR 20K (SMD)	4	R54,55,74,75
2	RS30218J05	RESISTOR 3K (SMD)	4	R67,68,73,76
2	RS51118J05	RESISTOR 510O (SMD)	2	R15,50
2	RS91218J05	RESISTOR 9K1 (SMD)	4	R66,69,72,77
2	R45001	RESISTOR 45O 1W	1	R2

Q02 BOM

LEVEL	P/N	DESCRIPTION	QTY	REF
2	TE10200601	6P CONNECTOR	1	J14
2	TE612000202	2P CONNECTOR	2	J11,16
2	WS073307IC	WASHER	2	(U3)
2	0-05-1399	RESISTOR 3.9O	2	R91,92
2	0-16-2210	RESISTOR 221O (SMD)1%	10	R4,9,10,46,47,65,71,79,80,83
2	0-16-3650	RESISTOR 365O (SMD)1%	1	R94
2	0-17-0103	RESISTOR 4×10K 1/16W	8	R7,8,16,33,34,56,64,70
2	0-17-0221	RESISTOR 4×220O 1/16W	8	R49,57~63
2	0-17-0470	RESISTOR 4×47O 1/16W	4	R6,85,86,90
2	1-08-0222	ELECT 22UF/16V	17	C31,40~48,51,54~57,75,76
2	1-08-0228	ELECT 2200UF/16V	2	C10,26
2	1-08-0333	ELECT 330UF/16V	1	C60
2	1-12-0102	ELECT 10UF/63V	2	C34,49
2	1-55-0561	CERAMIC 560P	14	C11~20,52,53,73,74
2	1-56-0104	CERAMIC 0.1UF	78	C1~4,9,21~25,27~30,32,33,35~39,50,61, 64~72,77~122
2	1-56-0151	CERAMIC 150P	4	C58,59,62,63
2	1-56-0221	CERAMIC 220P	4	C5~8
2	2-05-0111	TRANSISTOR J111	2	Q2,3
2	2-11-1317	IC LM317	1	U3
2	2-27-0060	IC AL3201	1	U11
2	2-50-4149	DIODE	6	D3,4,6,7,9,10
2	2-51-4401	TRANSISTOR 2N4401	2	Q1,6
2	2-51-4403	TRANSISTOR 2N4403	2	Q4,5
2	2-61-2417	IC LM1117	1	U12
2	2-61-7807	IC LM340MP	1	U13
2	2-62-0014	IC 74AHC14	1	U8
2	2-66-6256	IC DRAM 256K	2	U6,17
2	2-67-6257	IC SRAM 32K	1	U18
2	2-70-5206	IC MCF5206E	1	U15
2	2-71-0084	IC TL084	2	U4,7
2	2-71-3079	IC MC33079	1	U5
2	2-74-0181	IC TLP181	1	U2
2	2-75-1101	IC AL1101	1	U9
2	2-75-1201	IC AL1201	1	U10
2	2-77-0096	IC AL3101	9	U20~28
2	2-79-1818	IC DS1818	1	U1
2	2-80-0007	IC	1	U16
2	4-00-0002	5P MIDI	3	J1~3
2	4-02-0007	7P JACK	7	J4~10
2	4-14-0012	12P HEADER	1	J18
2	4-14-0016	16P HEADER	1	J17
2	4-14-0116	16P HEADER	2	J15,19
2	4-14-2601	26P HEADER	1	J13
2	5-03-0028	STANDOFF	1	(U3)
2	6-02-0003	SWITCH	1	S2
2	7-01-0024	CRYSTAL 12.288MHz	1	X1
2	7-01-0035	OSCILLATOR 54MHz	1	U19
2	9-40-0328	MAIN PCB	1	
2	9-61-0121	IC	1	U14
1	**9-79-0332**	**LED PCB ASS'Y**	**1**	**10**
2	R10116	RESISTOR 100O 1/16W	3	R1~3
2	TE622000201	2P CONNECTOR	1	J1
2	3-02-0049	RED LED	3	D1~3
2	9-40-0332	LED PCB	1	

ALESIS
MICRON (Q02)
QC PROCEDURES

Q02 QC Test Procedures

Items required for test (one each unless otherwise specified):

- Q02 unit with current OS
- 9VAC, 1.5A power adapter
- MIDI cable
- Sustain pedal
- Pair of headphones
- AP Computer w/ cables

Setup

1) Connect power adapter to power outlet and to Q02.
2) Connect the MIDI cable from Q02 MIDI OUT to Q02 MIDI IN.
3) Plug the headphones into the **headphones** output jack of the Q02. Turn **Master Volume** knob (red knob) completely CCW.
4) Power up Q02 while holding down **[Octave –]** and **[Octave +]** buttons. This brings the Q02 into diagnostic mode. Verify that the text **“Push enc to test”** appears on the first line of the LCD.

Visual Inspection

1) Inspect the front panel for dents and scratches.
2) Make sure that the end caps are properly seated into the chassis. Verify that they also don’t have any dents any scratches.
3) Verify that all the jacks on the rear of the Q02 have nuts installed.

Pitch wheel LEDs

1) Verify that the pitch wheel lights up red. The light should get bright and dim in a cycle.

Expression Pedal Test

1) Plug the sustain pedal into the “**expr” input** jack of the Q02.
2) Press on the sustain pedal and verify that the LCD displays the text “Exp pedal: 0”.
3) Release the sustain pedal and verify that the LCD now displays the text “Exp pedal: 16383”
4) Plug the sustain pedal into the “**sustain” input** jack of the Q02.

Audio Output Test

1) While listening to the headphones, press a key and turn the **Master Volume** knob clockwise until the sound is at a comfortable listening level (this verifies that the **Master Volume** pot is functional). Verify that both the left and right sides of the headphones produce a sound.
2) Plug the headphones into the Q02 audio output **left** jack. Verify that when a key a pressed, a sound is heard on one side (left side) of the headphones. NOTE: the **Master Volume** knob may require adjustment in order to hear this sound more easily.
3) Repeat step 2) for the Q02 audio output **right** jack. The sound should again be heard on the left side of the headphones.

Audio Output Test

1) Plug the headphones into the Q02 headphone output jack (**Master Volume** knob may require readjustment to bring headphone output to a comfortable listening level).
2) Press and hold down a key (do not release). A single sound should be heard from the headphones.
3) Press and hold a second key (do not release the first key) and verify that a second sound is heard together with the first one.
4) Press and hold a third key (do not release the first and second key) and verify that a third sound is heard together with the first and second ones.
5) Repeat step 4) five more times, so that a total of eight notes are playing simultaneously, each time verifying that the new note is heard along with the existing notes that are already playing.

External Audio Input

1) Hold down the **[phrase]** and **[latch]** buttons together. Verify that the second line of the LCD says **"Audio in -> out".** Release the buttons.
2) Connect the AP generator output to the Q02 audio input left.
3) Set the AP generator output to produce a 2Vp, 1KHz sinewave and turn on the output.
4) Verify that there is a sound from the left side of the headphones
5) Connect the AP generator output to the Q02 audio input right and verify that there is a sound from the right side of the headphones.

AP Test

1) Unplug the headphones from the Q02 headphones jack.
2) Turn the **Master Volume** knob completely clockwise.
3) Connect the AP generator outputs A and B to the Q02 audio in left and right, respectively.
4) Connect the Q02 main output left and right to the AP analyzer inputs A and B, respectively.
5) Run the AP tests (SNR, THD+N, and frequency response).
6) Hold down the **[phrase]** and **[latch]** buttons together. Verify that the second line of the LCD says **"Synth -> audio out".** Release the buttons.

Automated Tests

The system will provide a series of tests must be passed. Before beginning, verify that the sustain pedal is plugged into the "**sustain" input** jack.

PUSH THE ENCODER TO BEGIN AUTOMATED TESTS.

Each test is described below. The title of each section should appear on the first line of the LCD.

Push all buttons.

1) Verify that the first line of the LCD says "Push all buttons".
2) There are **7 rectangular** buttons to the left of the LCD. Push each one. Verify that the button lights **red** when it is pushed, and stays red for the remainder of the test.
3) There are **5 round** buttons to the right of the LCD. Push each one. Verify that the button lights **green** when it is pushed, and lights red when it is released. When a different round button is pushed, the light should turn off. There should never be more than one round button lit.
4) When any button is pressed down, verify that the name of that button is displayed on the LCD, and that the LCD indicates the button is pressed down with the text "**[button]** down."
5) When any button is released, verify that the LCD indicates the button has been released with the text "**[button]** up."
6) As each button is pressed, make sure that the silk screen on that button is not scratched or misaligned. Also verify that all the buttons have a consistent feel, and that they generate one "click" when pressed.
7) When all 12 buttons have been pushed, you will automatically go to the next test.

Press all keys.

1) Verify that the first line of the LCD says “Press all keys”.
2) When a key pressed, verify that the LCD says “**Key ## down”**, where ## is the key number. The leftmost key is number 0, and the rightmost key is number 36.
3) When a key is released, verify that the LCD says “**Key ## up”**, where ## is the same key number.
4) As each key is pressed, make sure that the key movement and feel is consistent with all the other keys. Inspect the keys as well for scratches and dents.
5) When all 37 keys have been pressed, you will automatically go to the next test.

Turn p wheel -->

1) Verify that the first line of the LCD says “Turn p wheel -->”.
2) Turn the pitch wheel completely to the **right**.

Turn p wheel <--

1) Verify that the first line of the LCD says “Turn p wheel <--”.
2) Turn the pitch wheel completely to the **left**.

Slide m1 -->

1) Verify that the first line of the LCD says “Slide m1 -->”.
2) Slide the m1 slider completely to the **right**.

Slide m1 <--

1) Verify that the first line of the LCD says “Slide m1 <--”.
2) Slide the m1 slider completely to the **left**.

Slide m2 -->

1) Verify that the first line of the LCD says “Slide m2 -->”.
2) Slide the m2 slider completely to the **right**.

Slide m2 <--

1) Verify that the first line of the LCD says “Slide m2 <--”.
2) Slide the m2 slider completely to the **left**.

Turn knob x -->

1) Verify that the first line of the LCD says “Turn knob x -->”.
2) Turn knob x to the **right** until the number passes 1500.
3) Verify that the turning is smooth. **If the number jumps around, the unit does not pass.**
4) Also verify that there are no bumps or rough spots felt on the pot knob as it is turned.

Turn knob x <--

1) Verify that the first line of the LCD says “Turn knob x <--”.
2) Turn knob x to the **left** until the number passes -1500.
3) Verify smoothness as described above.

Turn knob y -->

1) Verify that the first line of the LCD says “Turn knob y -->”.
2) Turn knob y to the **right** until the number passes 1500.
3) Verify smoothness as described above.

Turn knob y <--

1) Verify that the first line of the LCD says “Turn knob y <--”.
2) Turn knob y to the **left** until the number passes -1500.
3) Verify smoothness as described above.

Turn knob z -->

1) Verify that the first line of the LCD says “Turn knob z -->”.
2) Turn knob z to the **right** until the number passes 1500.
3) Verify smoothness as described above.

Turn knob z <--

1) Verify that the first line of the LCD says “Turn knob z <--”.
2) Turn knob z to the **left** until the number passes -1500.
3) Verify smoothness as described above.

Turn enc -->

1) Verify that the first line of the LCD says “Turn enc -->”..
2) Turn the encoder to the **right** until the number passes 200.

Turn enc <--

1) Verify that the first line of the LCD says “Turn enc <--”..
2) Turn the encoder to the **left** until the number passes -200.

Push sus pedal.

1) Verify that the first line of the LCD says “Push sus pedal”..
2) Verify that the sustain pedal is plugged into the **sustain** jack, and push and release the sustain pedal.

Push: MIDI loop.

1) Verify that the first line of the LCD says “Push: MIDI loop”.
2) Verify that the MIDI in jack is connected to the MIDI out jack with a MIDI cable.
3) Push the encoder to test the connection.

Tests passed.

1) Verify that the first line of the LCD says “* Tests passed”.

END OF QC TEST PROCEDURES

Firmware Update

To update firmware, power on the system while holding down the **[programs]** and **[setups]** buttons. Connect a PC to the MIDI in jack, and send a sysex file.

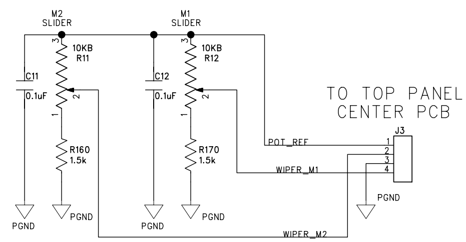
ALESIS
MICRON (Q02)

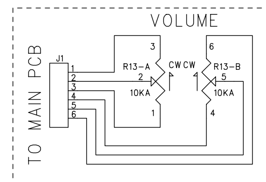
SCHEMATIC
AND
PCB
FILES

6 | 5 | 4 | 3 | 2 | 1

D

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:





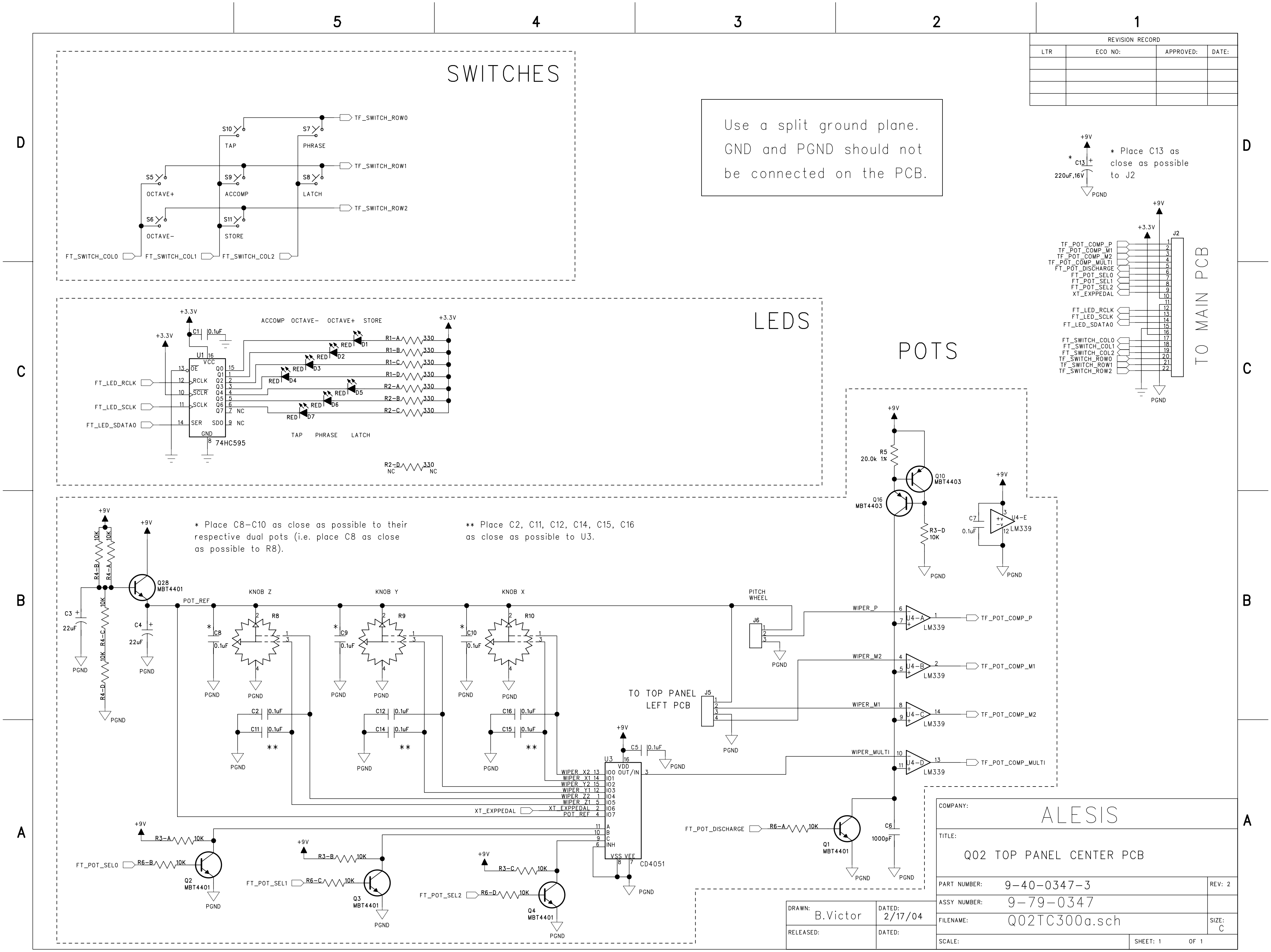
C

B

A

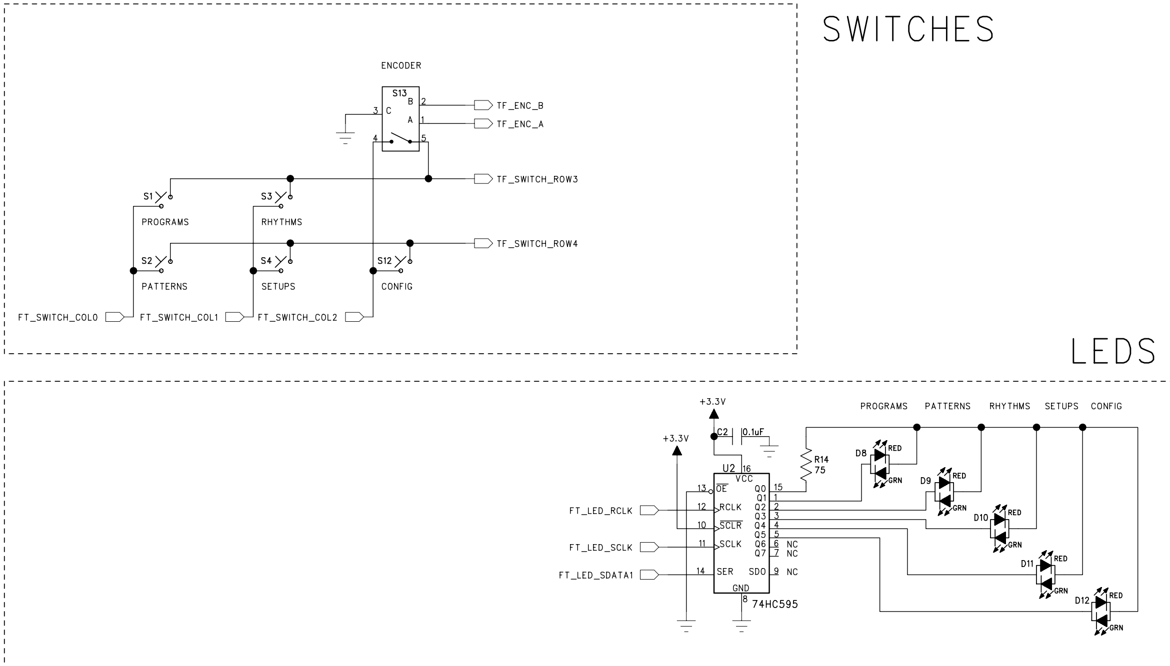
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RELEASED:	DATED:

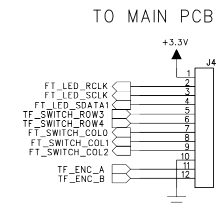
COMPANY: ALESIS	
TITLE: Q02 TOP PANEL LEFT PCB	
PART NUMBER: 9-40-0329-2	REV: 2
ASSY NUMBER: 9-79-0329	
FILENAME: Q02TL200a.sch	SIZE: C
SCALE:	SHEET: 1 OF 1



5
4
3
2
1
D
C
B
A
REVISION RECORD
LTR
ECO NO:
APPROVED:
DATE:
SWITCHES
S10 TAP
S7 PHRASE
TF_SWITCH_ROW0
S5 OCTAVE+
S9 ACCOMP
S8 LATCH
TF_SWITCH_ROW1
TF_SWITCH_ROW2
S6 OCTAVE-
S11 STORE
FT_SWITCH_COL0
FT_SWITCH_COL1
FT_SWITCH_COL2
Use a split ground plane.
GND and PGND should not
be connected on the PCB.
* Place C13 as
close as possible
to J2
C13
220uF,16V
+9V
PGND
+3.3V
J2
TF_POT_COMP_P
TF_POT_COMP_M1
TF_POT_COMP_M2
TF_POT_COMP_MULTI
FT_POT_DISCHARGE
FT_POT_SEL0
FT_POT_SEL1
FT_POT_SEL2
XT_EXPPEDAL
FT_LED_RCLK
FT_LED_SCLK
FT_LED_SDATA0
FT_SWITCH_COL0
FT_SWITCH_COL1
FT_SWITCH_COL2
TF_SWITCH_ROW0
TF_SWITCH_ROW1
TF_SWITCH_ROW2
TO MAIN PCB
LEDS
ACCOMP OCTAVE- OCTAVE+ STORE
C1 0.1uF
U1 74HC595
VCC
OE
RCLK
SCLR
SCLK
SER
Q0 Q1 Q2 Q3 Q4 Q5 Q6 Q7
SDO
GND
NC
FT_LED_RCLK
FT_LED_SCLK
FT_LED_SDATA0
RED D1
RED D2
RED D3
RED D4
RED D5
RED D6
RED D7
R1-A 330
R1-B 330
R1-C 330
R1-D 330
R2-A 330
R2-B 330
R2-C 330
TAP PHRASE LATCH
R2-D NC 330 NC
POTS
R5 20.0k 1%
Q10 MBT4403
Q16 MBT4403
R3-D 10K
C7 0.1uF
U4-E LM339
* Place C8-C10 as close as possible to their respective dual pots (i.e. place C8 as close as possible to R8).
** Place C2, C11, C12, C14, C15, C16 as close as possible to U3.
R4-B 10K
R4-A 10K
R4-C 10K
R4-D 10K
Q28 MBT4401
C3 22uF
C4 22uF
POT_REF
KNOB Z
R8
KNOB Y
R9
KNOB X
R10
C8 0.1uF
C9 0.1uF
C10 0.1uF
C2 0.1uF
C11 0.1uF
C12 0.1uF
C14 0.1uF
C16 0.1uF
C15 0.1uF
PITCH WHEEL
J6
TO TOP PANEL LEFT PCB
J5
WIPER_P
WIPER_M2
WIPER_M1
WIPER_MULTI
U4-A LM339
U4-B LM339
U4-C LM339
U4-D LM339
TF_POT_COMP_P
TF_POT_COMP_M1
TF_POT_COMP_M2
TF_POT_COMP_MULTI
U3 CD4051
C5 0.1uF
VDD
OUT/IN
WIPER_X2
WIPER_X1
WIPER_Y2
WIPER_Y1
WIPER_Z2
WIPER_Z1
XT_EXPPEDAL
POT_REF
IO0 IO1 IO2 IO3 IO4 IO5 IO6 IO7
A B C INH
VSS VEE
R3-A 10K
R6-B 10K
FT_POT_SEL0
Q2 MBT4401
R3-B 10K
R6-C 10K
FT_POT_SEL1
Q3 MBT4401
R3-C 10K
R6-D 10K
FT_POT_SEL2
Q4 MBT4401
FT_POT_DISCHARGE
R6-A 10K
Q1 MBT4401
C6 1000pF
COMPANY: ALESIS
TITLE: Q02 TOP PANEL CENTER PCB
PART NUMBER: 9-40-0347-3
REV: 2
ASSY NUMBER: 9-79-0347
FILENAME: Q02TC300a.sch
SIZE: C
DRAWN: B.Victor
DATED: 2/17/04
RELEASED:
DATED:
SCALE:
SHEET: 1 OF 1

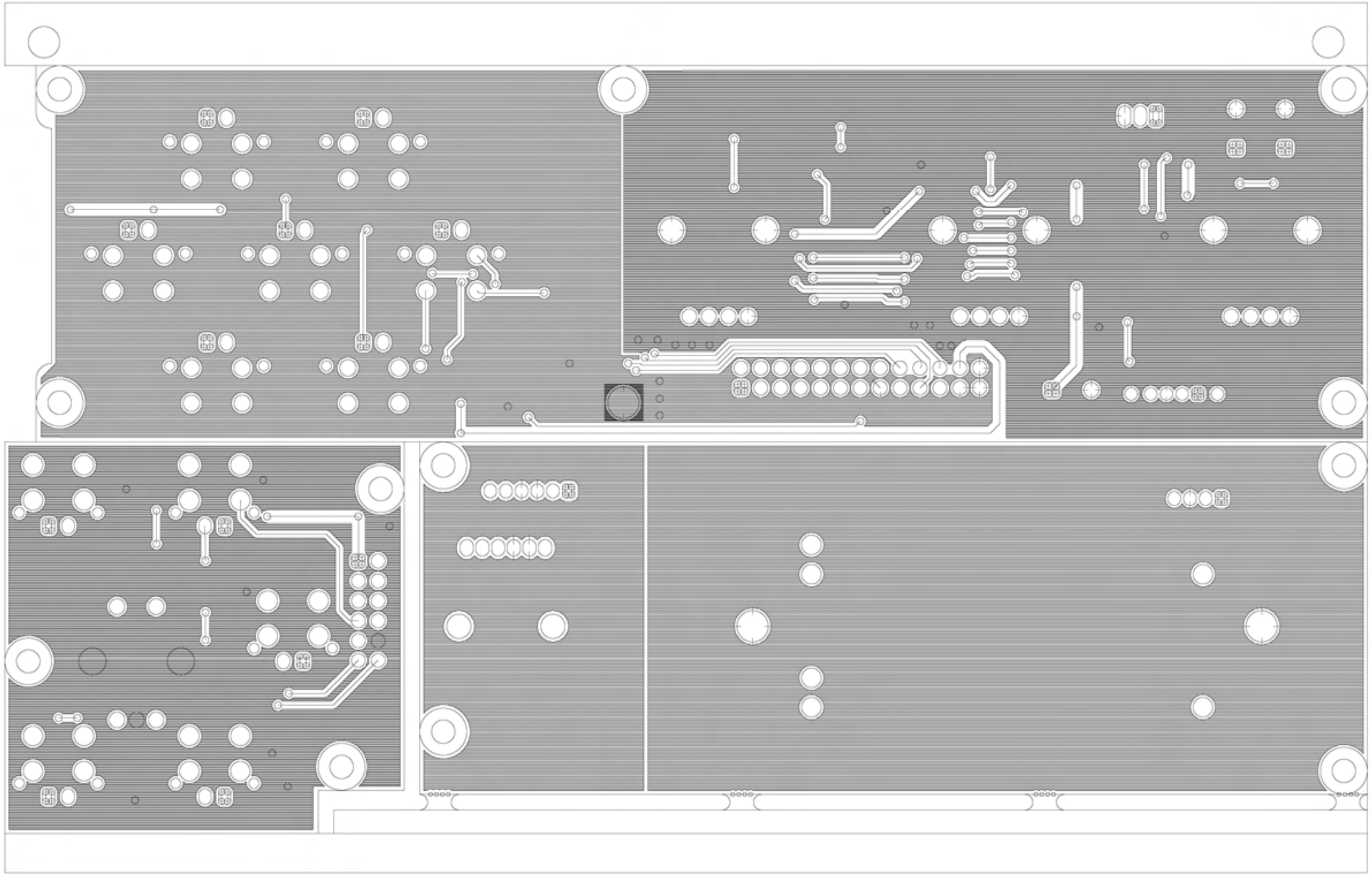
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LTR	ECO NO:	APPROVED:	DATE:

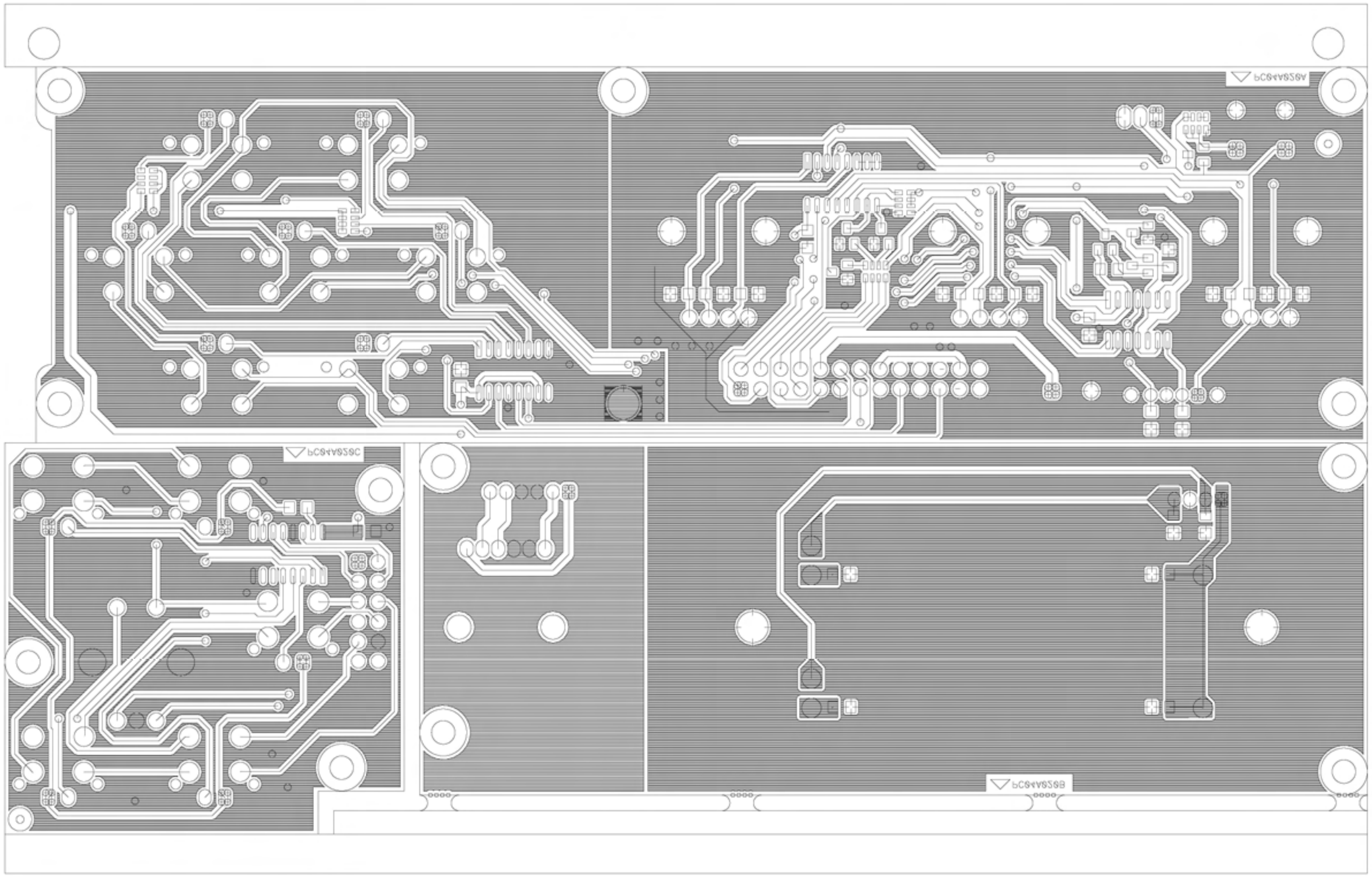


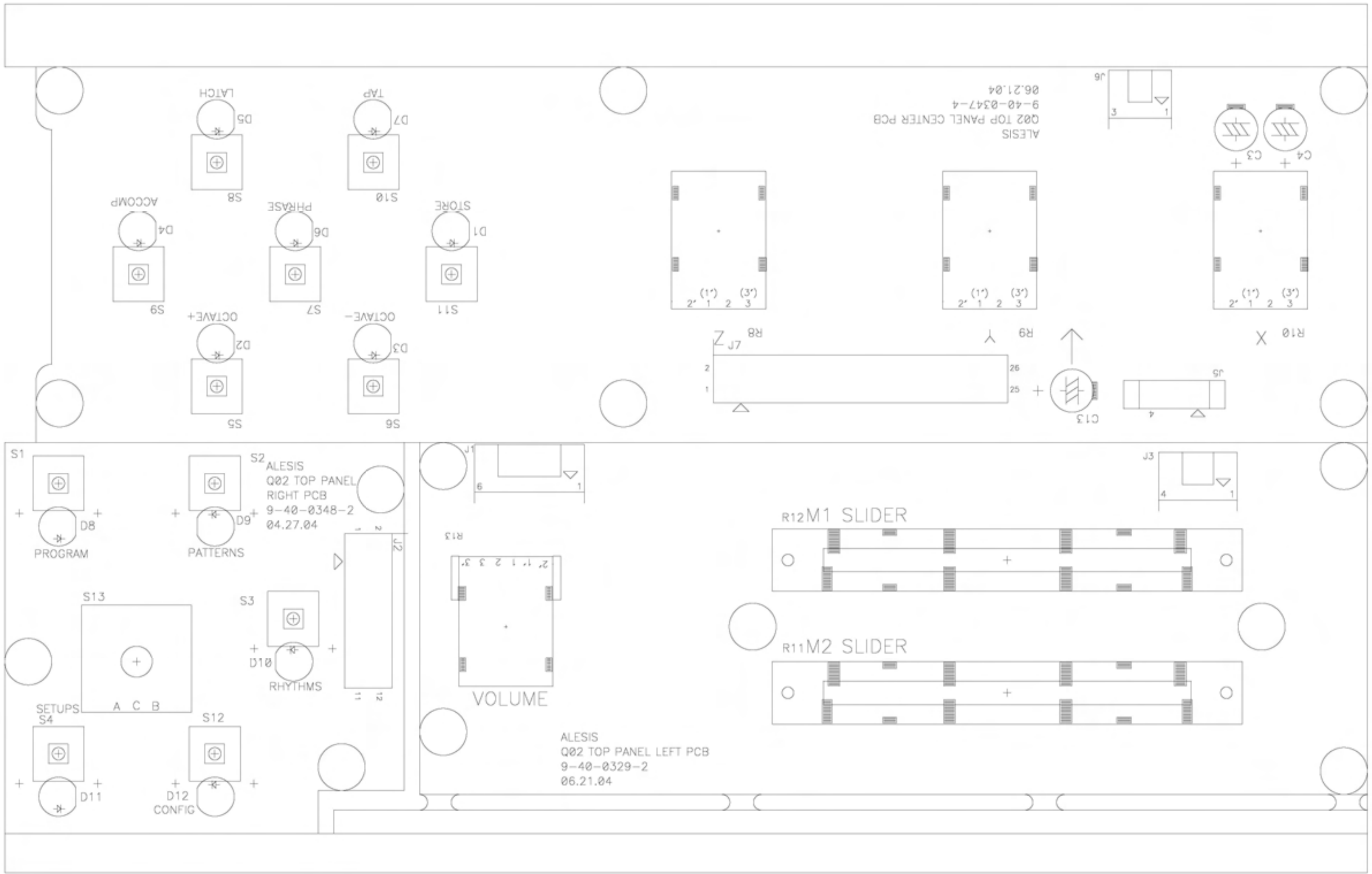


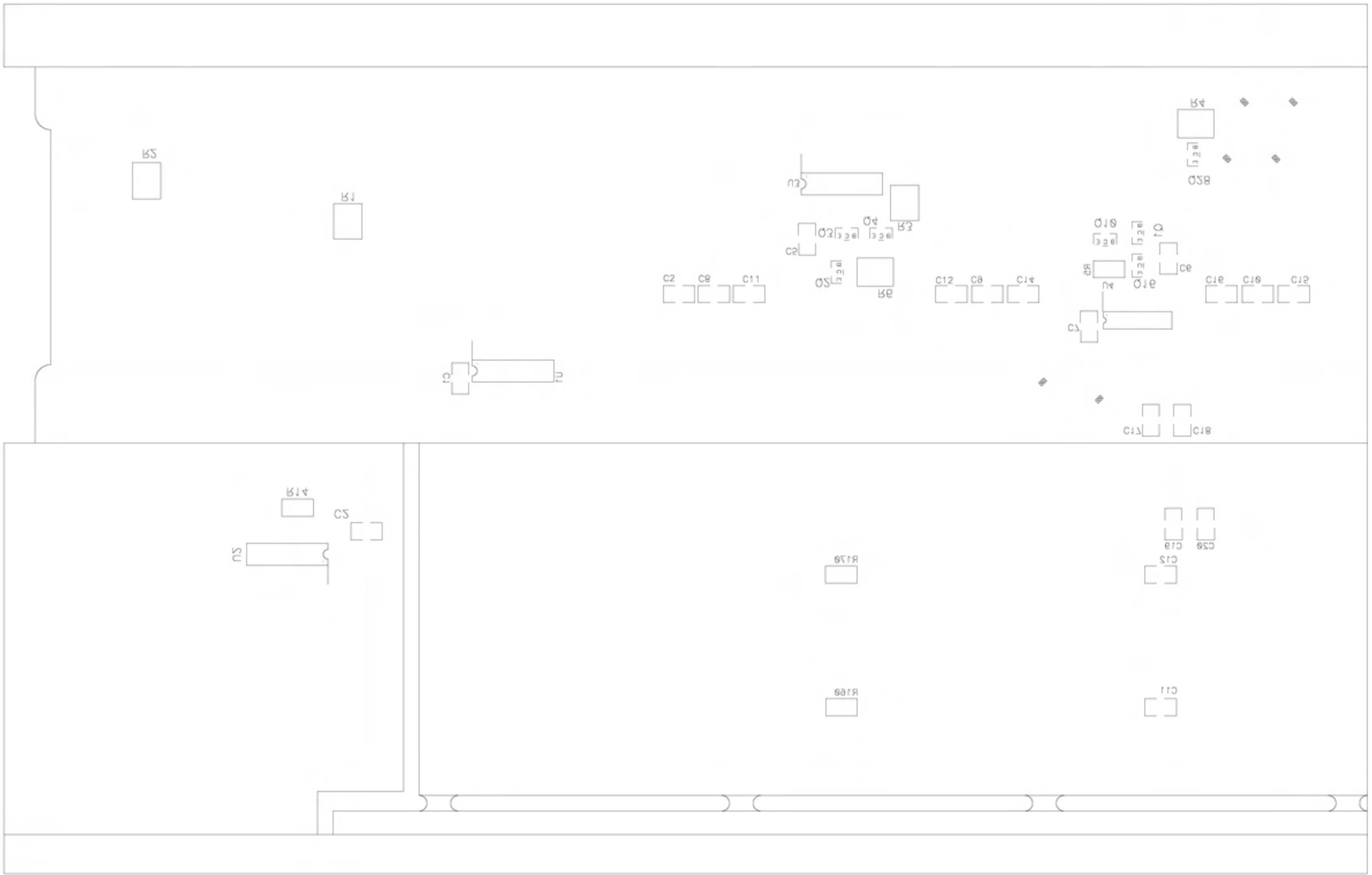
DRAWN: B.Victor	DATED: 1/20/04
RELEASED:	DATED:

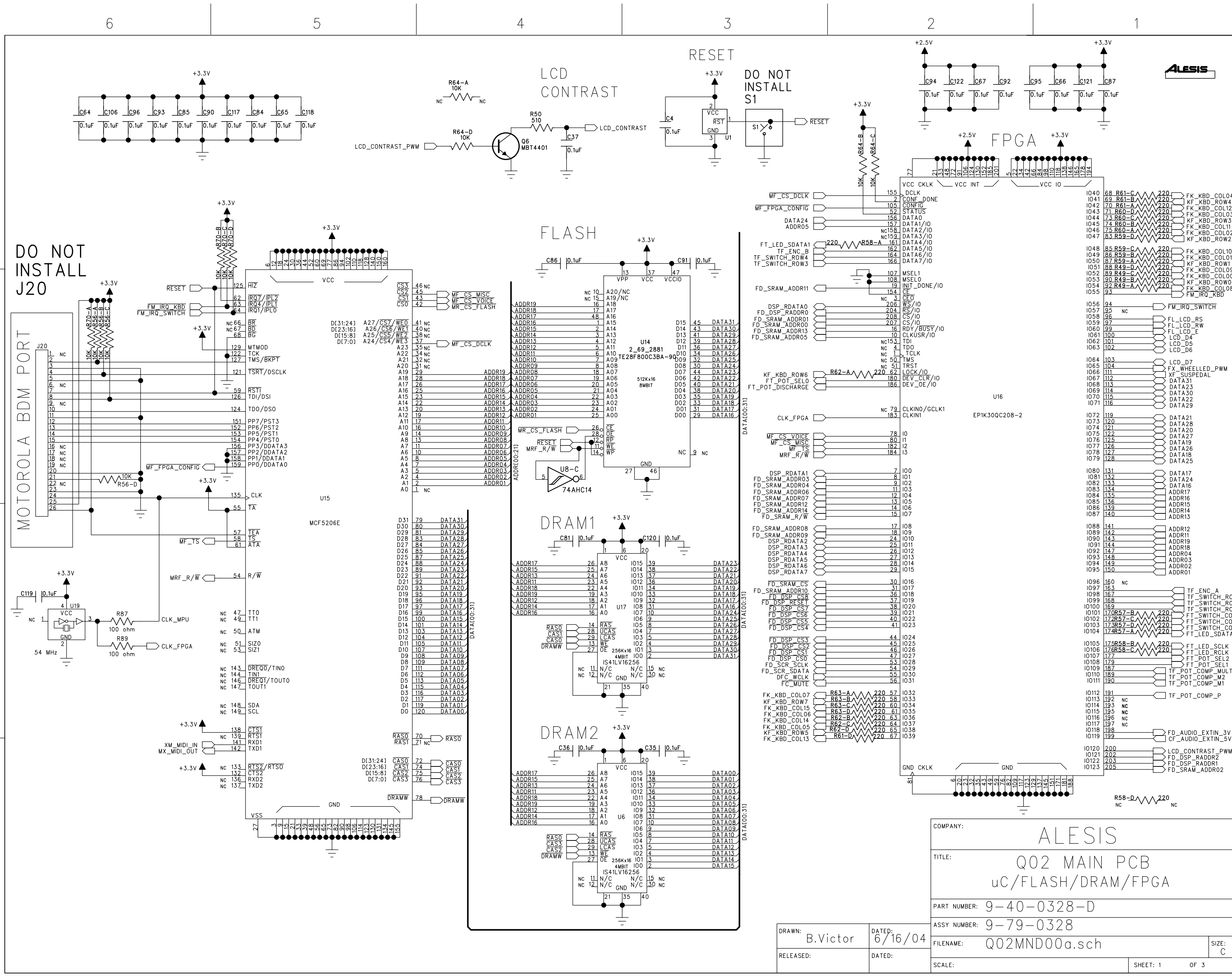
COMPANY:	ALESIS	
TITLE:	Q02 TOP PANEL RIGHT PCB	
PART NUMBER:	9-40-0348-2	REV: 1
ASSY NUMBER:	9-79-0348	
FILENAME:	Q02TR200a.sch	SIZE: C
SCALE:		SHEET: 1 OF 1



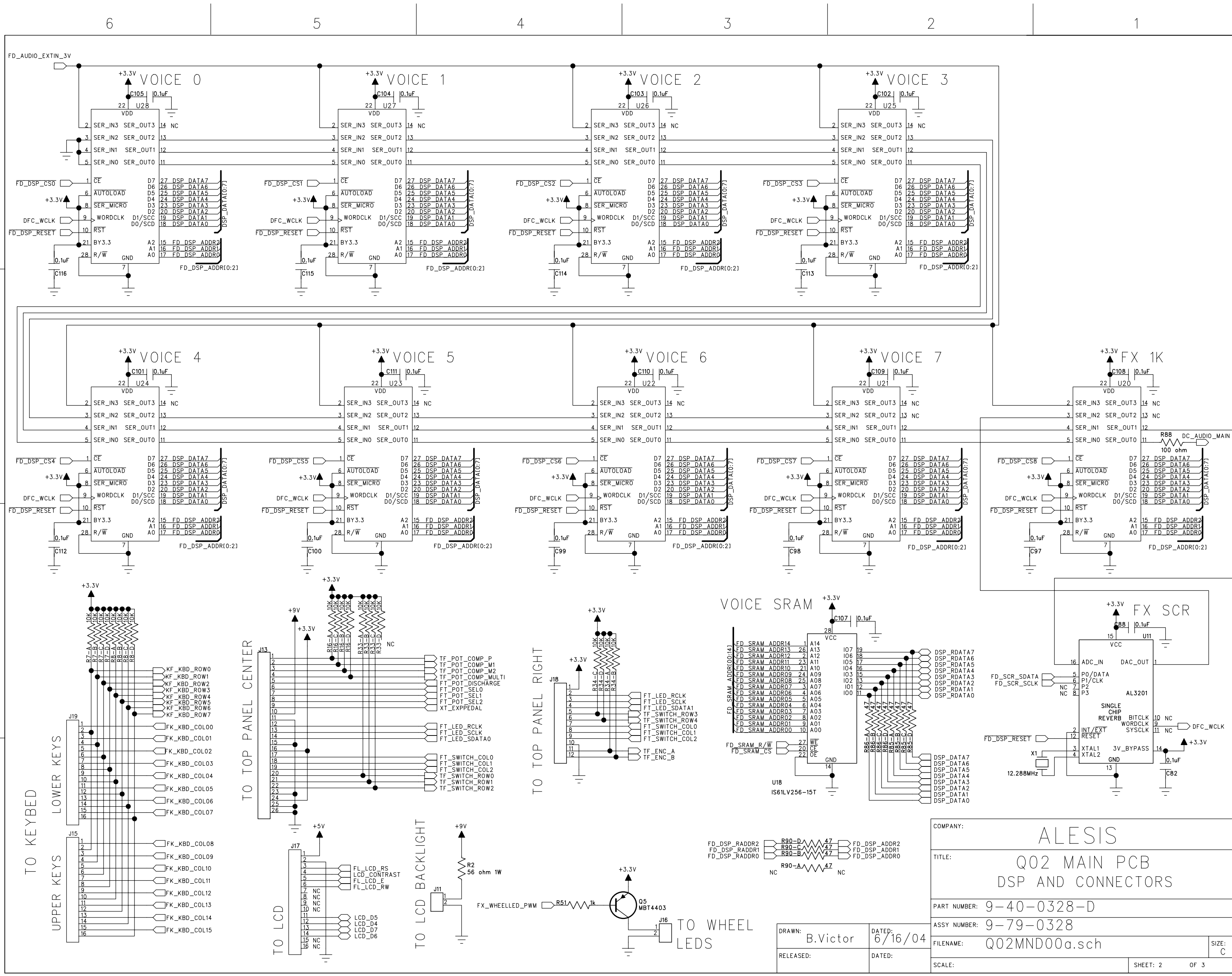



ALESIS
Q02 TOP PANEL CENTER PCB
9-40-0347-4
06.21.04
LATCH
TAP
ACCOMP
PHRASE
STORE
OCTAVE+
OCTAVE-
ALESIS
Q02 TOP PANEL
RIGHT PCB
9-40-0348-2
04.27.04
PROGRAM
PATTERNS
RHYTHMS
SETUPS
CONFIG
VOLUME
R12 M1 SLIDER
R11 M2 SLIDER
ALESIS
Q02 TOP PANEL LEFT PCB
9-40-0329-2
06.21.04

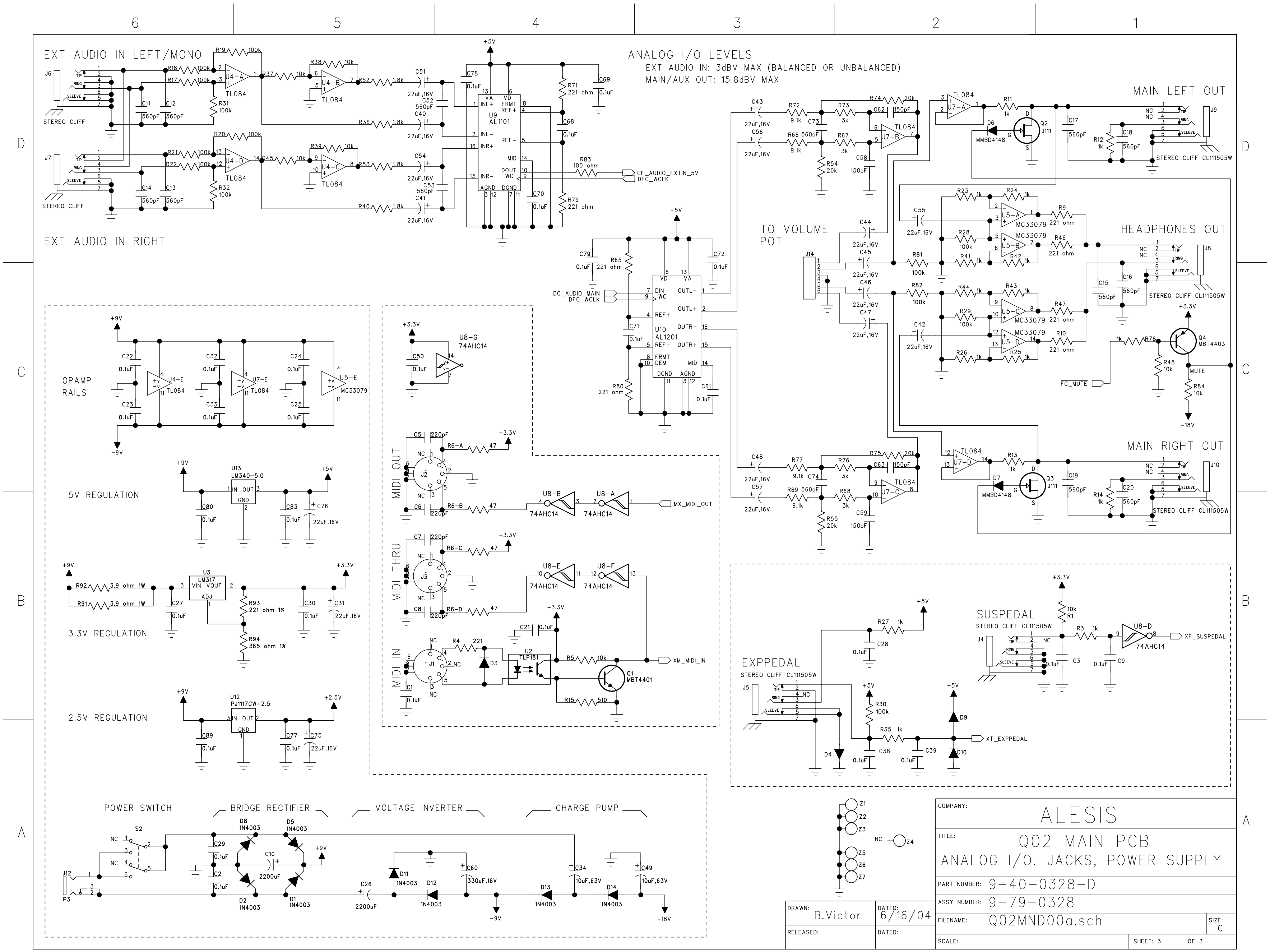


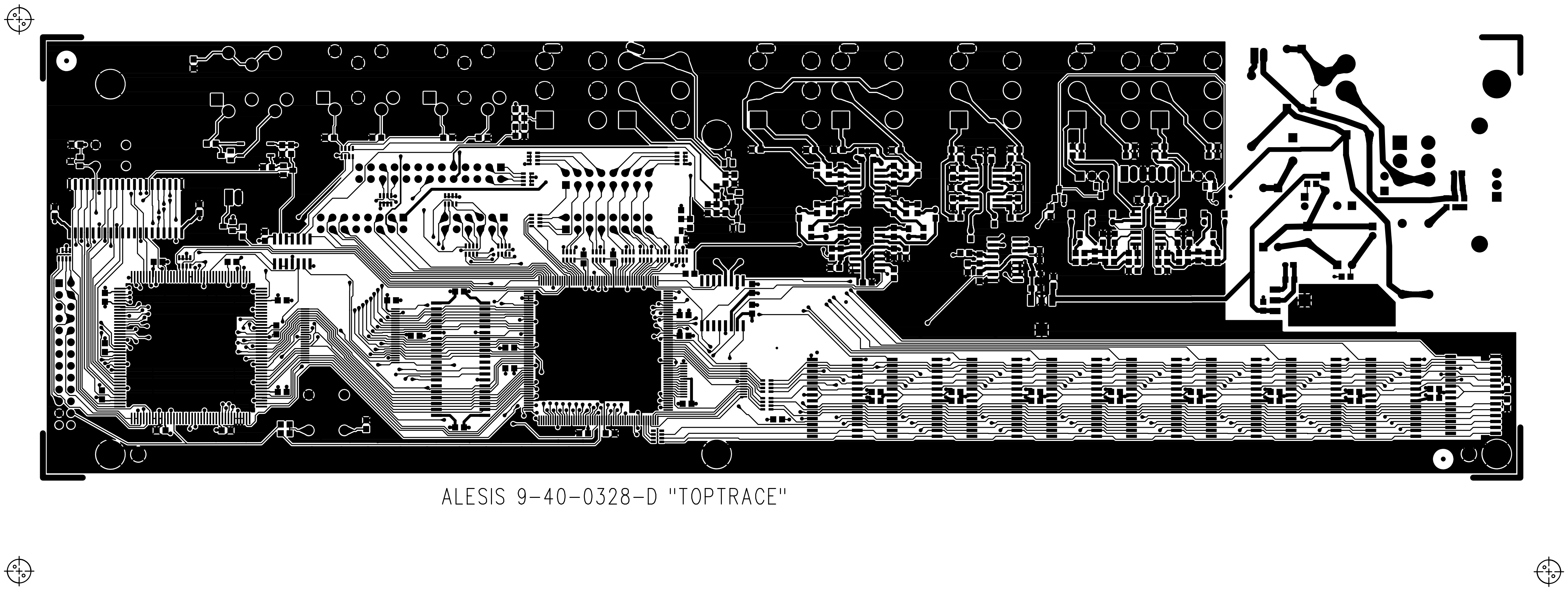


DO NOT INSTALL J20
MOTOROLA BDM PORT
LCD CONTRAST
RESET
DO NOT INSTALL S1
FLASH
DRAM1
DRAM2
FPGA
MCF5206E
U15
U14
TE28F800C3BA-90
U17
IS41LV16256
U6
U16
EP1K30QC208-2
U19
54 MHz
ALESIS
COMPANY: ALESIS
TITLE: Q02 MAIN PCB
uC/FLASH/DRAM/FPGA
PART NUMBER: 9-40-0328-D
ASSY NUMBER: 9-79-0328
FILENAME: Q02MND00a.sch
SIZE: C
DRAWN: B.Victor
DATED: 6/16/04
RELEASED:
DATED:
SCALE:
SHEET: 1 OF 3

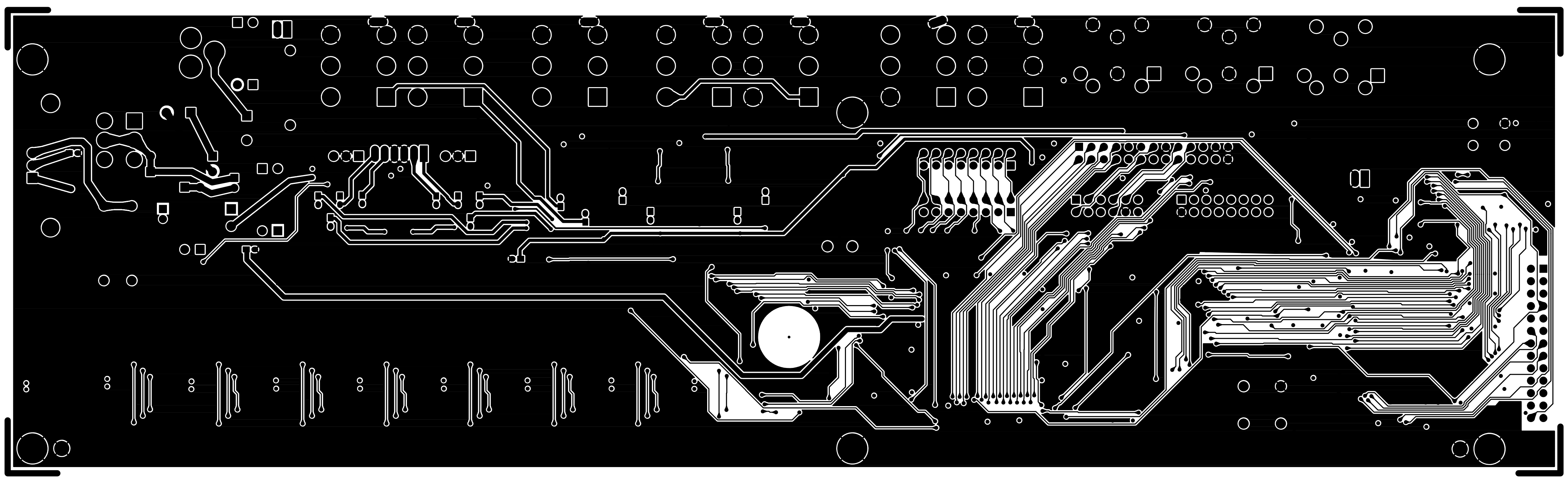


COMPANY:	ALESIS
TITLE:	Q02 MAIN PCB DSP AND CONNECTORS
PART NUMBER:	9-40-0328-D
ASSY NUMBER:	9-79-0328
FILENAME:	Q02MND00a.sch
SIZE:	C
SCALE:	
SHEET:	2 OF 3
DRAWN:	B.Victor
DATED:	6/16/04
RELEASED:	
DATED:	

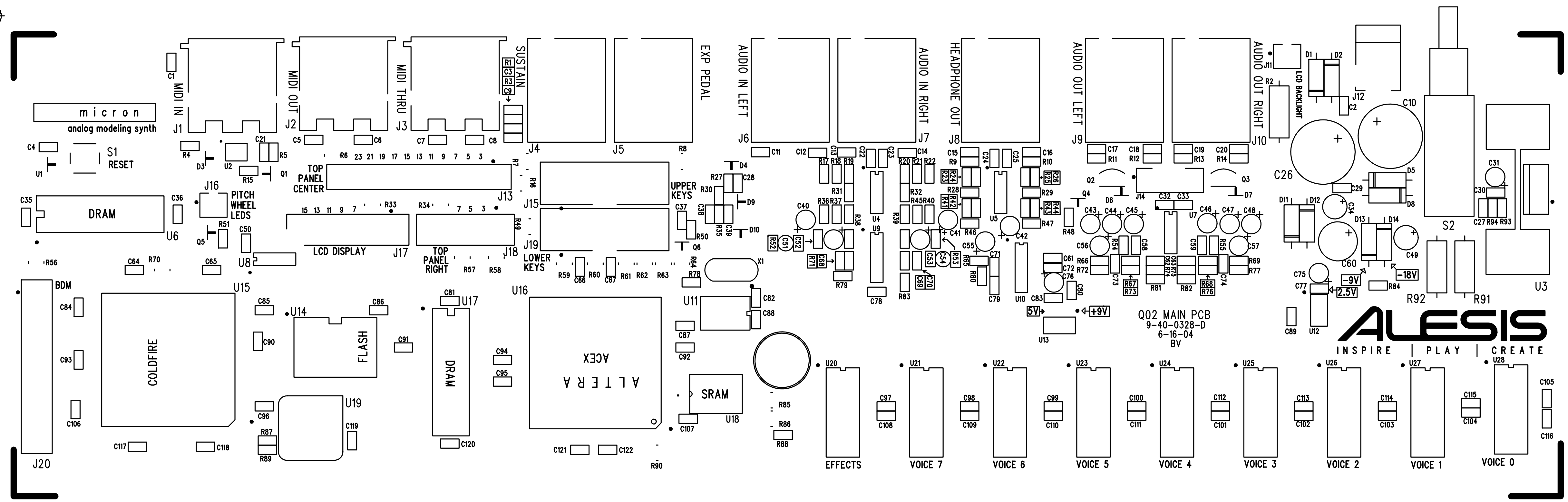

EXT AUDIO IN LEFT/MONO
EXT AUDIO IN RIGHT
ANALOG I/O LEVELS
EXT AUDIO IN: 3dBV MAX (BALANCED OR UNBALANCED)
MAIN/AUX OUT: 15.8dBV MAX
MAIN LEFT OUT
HEADPHONES OUT
MAIN RIGHT OUT
TO VOLUME POT
OPAMP RAILS
5V REGULATION
3.3V REGULATION
2.5V REGULATION
MIDI OUT
MIDI THRU
MIDI IN
EXPPEDAL
SUSPEDAL
POWER SWITCH
BRIDGE RECTIFIER
VOLTAGE INVERTER
CHARGE PUMP
CF_AUDIO_EXTIN_5V
DFC_WCLK
DC_AUDIO_MAIN
MX_MIDI_OUT
XM_MIDI_IN
FC_MUTE
XF_SUSPEDAL
XT_EXPPEDAL
STEREO CLIFF CL111505W
COMPANY: ALESIS
TITLE: Q02 MAIN PCB
ANALOG I/O. JACKS, POWER SUPPLY
PART NUMBER: 9-40-0328-D
ASSY NUMBER: 9-79-0328
FILENAME: Q02MND00a.sch
SIZE: C
DRAWN: B.Victor
DATED: 6/16/04
RELEASED:
DATED:
SCALE:
SHEET: 3 OF 3



ALESIS 9-40-0328-D "TOPTRACE"

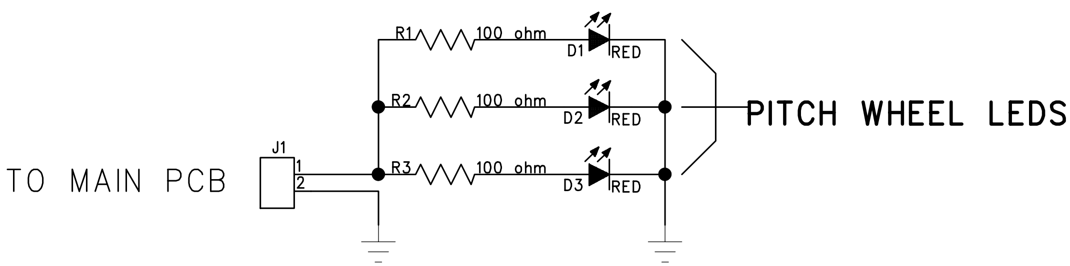


ALESIS 9-40-0328-D "BOTTRACE"



ALESIS 9-40-0328-D "TOPSILK"

REVISION RECORD			
LTR.	ECO NO:	APPROVED:	DATE:

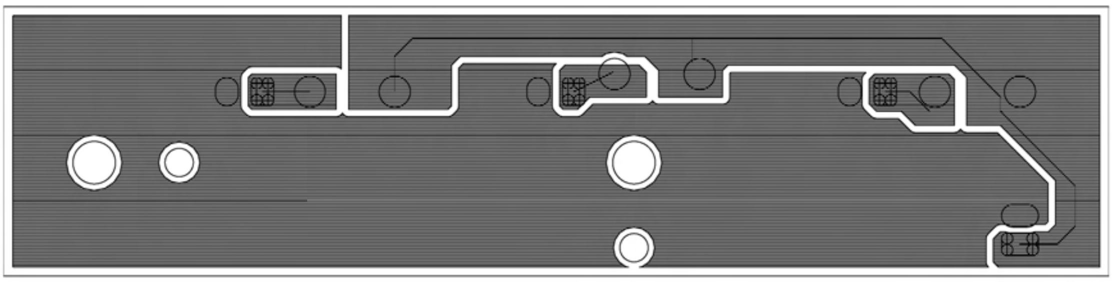


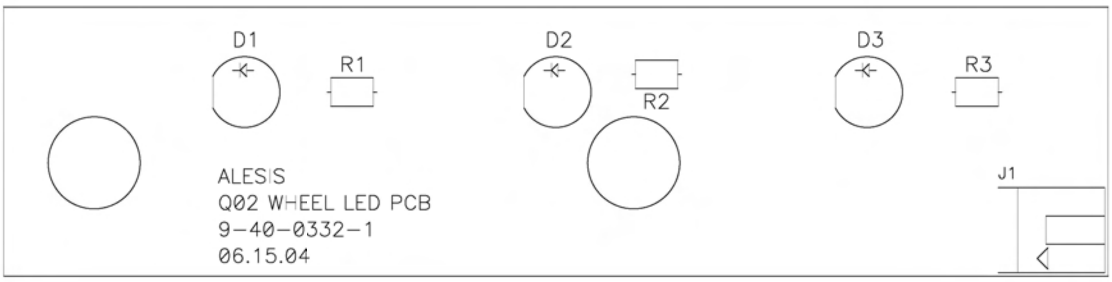
NOTES:

The manufacturer is free to choose the best type of resistor to use. (Thru hole, surface mount, quad pack, etc.)

Minimum wattage is less than 1/16 W.

COMPANY:	ALESIS
TITLE:	Q02 WHEEL LED PCB
DRAWN: B.Victor	DATED: 9/23/03
RELEASED:	DATED:
PART NUMBER:	9-40-0332-1
ASSY NUMBER:	9-79-0332
FILENAME:	Q02WL100A.sch
SIZE:	A
SCALE:	SHEET: 1 OF: 1




D1
R1
D2
R2
D3
R3
ALESIS
Q02 WHEEL LED PCB
9-40-0332-1
06.15.04
J1

ALESIS
MICRON (Q02)

ECN
HISTORY